DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027934
Date Inspected: 10-Jul-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1830
Location: Job Site

CWI Name: Bernie Docena

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base Electro Slag Weld (ESW) location 'E' face A (N-045), QA randomly observed ABF/JV qualified welder James Zhen continuing to perform CJP groove welding repair. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a Bug –o track mounted dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3000-3 Repair. The repair excavation was preheated and continuously maintained to more than 350 degree Fahrenheit using Miller Proheat 35 Induction Heating System prior/during welding. The ESW repair being welded is located at ESW 'V' face A, Y=7600mm to Y=9850mm having dimensions of 2250mm long X 60mm wide X 40mm deep. During the shift, ABF QC Bernie Docena was noted monitoring the welder with measured working current of 260 amperes, 23.2 volts with travel speed of 220mm per minute and calculated heat input of 1.65Kjoules per mm. At the end of the shift, 3G FCAW-G repair welding at location mentioned above was completed and the welder held the same preheat of 350°F on the excavation repair for three hours after welding as required.

Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
1. 'E'	N-045	7600mm	2250mm	60mm	40mm	Completed

At Tower Base Electro Slag Weld (ESW) location 'V' face A (W-043), QA randomly observed ABF/JV qualified

welder Luo Xiao Hua (who took over from Xiao Jian Wan) continuing to perform CJP groove welding repair. The welder was observed manually welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1000 Repair Rev. 2. The repair excavation was preheated and continuously maintained to more than 350 degree Fahrenheit using Miller Proheat 35 Induction Heating System prior/during welding. The ESW repair being welded is located at ESW 'V' face A, Y=4550mm to Y=4750mm was having dimensions of 200mm long X 60mm wide X 55mm deep is a continuation repair from face A due to linear indication that was left during previous MT. This repair has been approved per Request for Welding Repair (RWR) #201206-042. During the shift, ABF QC Bernie Docena was noted monitoring the welder with measured working current of 125 amperes. During the shift, repair welding at location mentioned above was completed. The welder held the same preheat of 350°F on the repair for three hours after welding as required.

Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
1. 'V'	W-043	4580mm	200mm	60mm	55mm	Completed

At Tower Base Electro Slag Weld (ESW), this QA observed ABF welder Jin Pei Wang perform repair excavation at location 'V' face A (W-043) Y=4930mm due to Ultrasonic Testing (UT) detected defect. The repair excavation is being undertaken per Caltrans approved Request for Weld Repair (RWR) #201206-047. The welder was noted using carbon air arc gouging followed by grinding using a die grinder. The following excavation events were noted during the repair excavation;

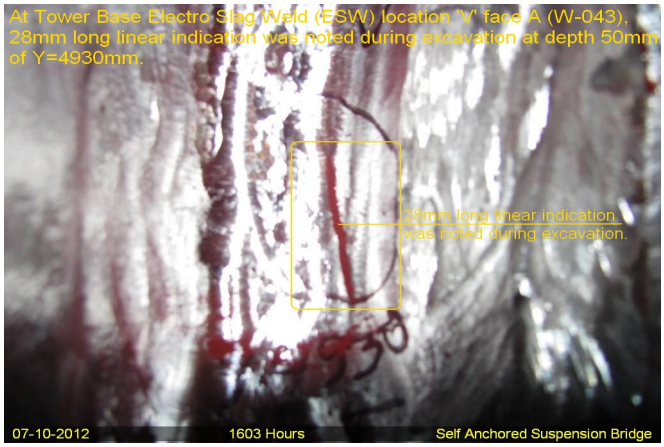
ESW location	Y-dim	Depth of excavation	Noted defect
1. 'V' (A)	4930mm	25mm	No indication noted.
2. 'V' (A)	4930mm	35mm	No indication noted.
3. 'V' (A)	4930mm	40mm	No indication noted.
4. 'V' (A)	4930mm	50mm	28mm long linear indication.
5. 'V' (A)	4930mm	55mm	Linear indication removed.

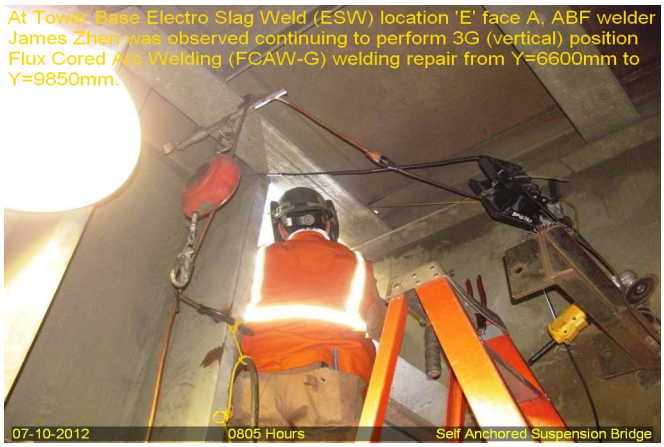
At Tower Base Electro Slag Weld (ESW), this QA observed ABF welder Jin Pei Wang perform repair excavation at location 'P' face B (N-043) Y=5060mm due to Ultrasonic Testing (UT) detected defect. The repair excavation is being undertaken per Caltrans approved Request for Weld Repair (RWR) #201206-074. The welder was noted using carbon air arc gouging followed by grinding using a die grinder. The following excavation events were noted during the repair excavation;

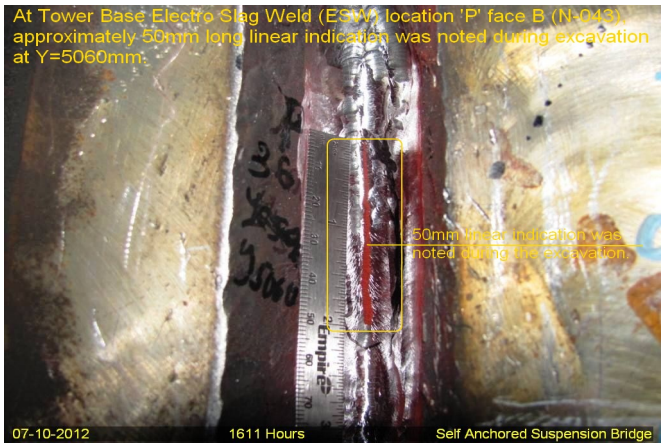
ESW location	Y-dim	Depth of excavation	Noted defect
1. 'P' (B)	5060mm	25mm	No indication noted.
2. 'P' (B)	5060mm	30mm	20mm long linear indication.
3. 'P' (B)	5060mm	36mm	50mm long linear indication.
4. 'P' (B)	5060mm	Excavation in progress.	

WELDING INSPECTION REPORT

(Continued Page 3 of 3)







Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer